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Wanted: Skilled Workers for a Growing Economy in Brazil



Lalo de Almeida for The New York Times

A worker on a plane production line for Embraer in Brazil. The company has doubled in size since the start of the decade.

By ANDREW DOWNIE Published: July 2, 2008

SÃO PAULO, Brazil — For almost any nation other than China or India, achieving more than 5 percent growth a year is hard. Doing it without skilled labor is even harder.

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Lalo de Almeida for The New York Times The aircraft manufacturer Embraer created a program that puts engineering graduates through a specialization course.

But that is the challenge facing Brazil, the B in the BRIC economies — Brazil, Russia, India and China — today's version of economic tigers.

After years of boom and bust, the administration of President Luiz Inácio Lula da Silva is projecting a period of sustained growth, with the gross domestic product increasing 5 percent a year, from now to 2010, and about 3 and 4 percent annually for the decade after.

But many companies and economists, including some inside the government, say the dearth of highly skilled labor, particularly engineers and tradesmen, will jeopardize those goals, and Brazil's economic and political rise.

"The lack of availability of technical ability may be a constraint on growth, no doubt about it," José Sergio Gabrielli, president of Petrobras, the state-run oil company, said in an interview. "It is a big challenge for the country."

The engineering shortage here is spreading across industries. The lack of civil and

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Theater section header with THEATER nytimes.com/theater and a photo of a theater stage. Below is the title 'Macbeth with a rabbit' and a list of other plays: 'Bad love makes good drama', 'Aya Ogawa's "oph3lia"', and 'Judith Thompson's "Palace of the End"'.

construction engineers threatens infrastructure projects; areas like banking, aircraft manufacture, petrochemicals and metals are all competing for the same top graduates. In the booming oil and gas industries, companies are turning to foreign labor because there are not enough qualified Brazilians to go around.

“Some of our big clients in the oil and gas sector have 40 to 50 job openings and they can’t fill them,” said Paulo Pontes, managing director of Michael Page International, a leading headhunting firm.

“When we asked companies what the careers of the future were, seven out of 10 of them were in engineering. That shows the reality of what is happening today.”

A study by the National Confederation of Industry last September found that more than half the 1,715 industrial firms polled could not find the skilled workers they needed. Of those, 69 percent said the lack of a qualified work force resulted in inefficiency; 36 percent said it led to lower quality goods; and 25 percent said it made acquiring or assimilating new technologies more difficult.

That reality is leading thousands of Brazilian companies into the education business. Some teach basic literacy and arithmetic to janitors and manual workers. Other more advanced courses help factory and production line workers better understand math, science and composition. And major companies are increasing the amount of on-the-job training they give to engineers and professionals.

“We are planning to invest \$11 billion this year and \$60 billion over the next five years just in organic growth projects,” said Maria Gurgel, director of human resources planning and compensation at Vale, one of the world’s largest mining companies. “The people behind these projects are geologists and engineers whose specialties are in ports, railways and mines. Those are the areas where we have shortages. We need to give them specialized training. It would be difficult to grow” without them, she said.

Today, companies like Vale, Petrobras, and the petrochemical firm Ultrapar spend millions of dollars on their own training programs.

A typical program is like the one at Embraer, one of the largest manufacturers of aircraft. Embraer builds private and commercial jets that seat from six to 122 people. The company has doubled in size since the start of the decade and currently has orders in excess of \$20 billion. It expects to deliver nearly 200 aircraft to clients this year.

That is because in part, of the creation of its specialization in engineering program. In 2001, company directors realized that with only three Brazilian universities offering courses in aeronautical engineering there would not be enough graduates available to help them design, build and sell planes in a rapidly growing market.

So the company created a program that selects the country’s best engineering graduates and puts them through an 18-month specialization course. They already have a base in disciplines like electronics, mechanics or design. In Embraer’s classrooms, overlooking a shop floor scattered with fuselages, they learn the skills that will help them become aeronautical engineers.

Júlio Franco, executive vice president for organizational development and personnel, said the company spends \$45,000 training each student.

“I have no doubt it pays off,” he said. “It gives us enormous peace of mind.”

The Brazilian government is less serene.

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